

FIG.1

FIG. 2

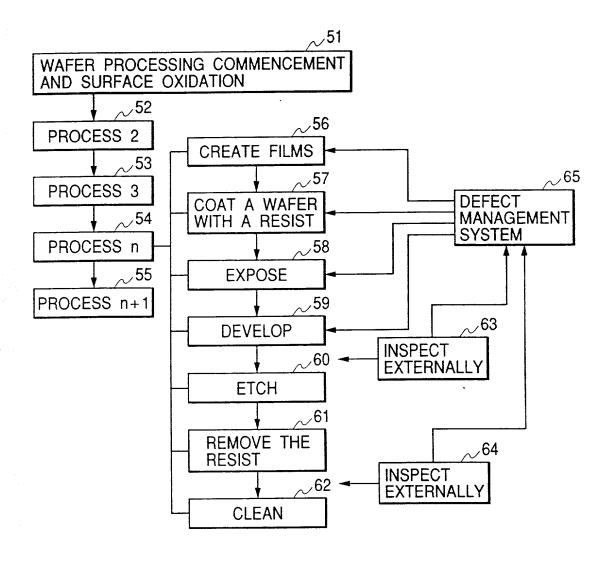


FIG. 3(a)

NORMALLY FABRICATED PATTERN

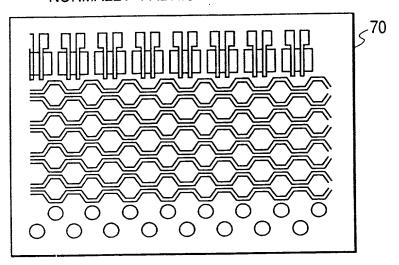
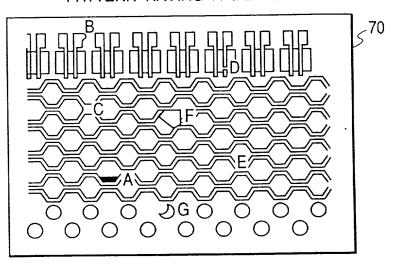


FIG. 3(b)

PATTERN HAVING A DEFECT



A: ISOLATED DEFECT

B: PROTRUSION

C:SHORT

D: OMISSION

E: DISCONNECTION

F: THIN FILM RESIDUAL

G: BAD APERTURE

FIG. 4
MOUNT A SPECIMEN 13 ON A SPECIMEN STAGE 12
72
MOVE THE SPECIMEN STAGE 12 TO THE INSIDE OF A CONTAINER 43
\ 73
EXHAUST AIR FROM THE CONTAINER 43 TO RESULT IN A VACUUM THEREIN
DETERMINE A START POINT OF PARIATION OF AN ELECTRON REAM 36 BY
DETERMINE A START POINT OF RADIATION OF AN ELECTRON BEAM 36 BY USING A POSITION MONITORING LENGTH MEASUREMENT UNIT 11
ADJUST THE FOCUS OF THE ELECTRON BEAM 36 BY USING A FIRST CONVERGENCE LENS 8 IN ACCORDANCE WITH HEIGHT DATA OF THE SPECIMEN 13 OBTAINED FROM A SENSOR 37 AND AN OPTICAL SPECIMEN HEIGHT MEASUREMENT UNIT 22
76
START THE OPERATIONS TO RADIATE THE ELECTRON BEAM 36, SCAN THE SPECIMEN 13 BY USING THE ELECTRON BEAM 36 AND MOVE THE SPECIMEN STAGE 12
RADIATE SECONDARY FLECTRONS 33 FMANATING FROM THE SPECIMEN 13 DUE 1
RADIATE SECONDARY ELECTRONS 33 EMANATING FROM THE SPECIMEN 13 DUE TO RADIATION OF THE ELECTRON BEAM 36 TO A SECONDARY-ELECTRON GENERATING SUBSTANCE 19 TO GENERATE SECOND SECONDARY ELECTRONS 20 AND THEN CONVERT THE SECOND SECONDARY ELECTRONS INTO A PICTURE ELECTRICAL SIGNAL BY USING THE ELECTRICALLY CHARGED PARTICLE DETECTOR 21
STORE A PICTURE ELECTRICAL SIGNAL REPRESENTING THE NUMBER OF SECOND SECONDARY ELECTRONS CORRESPONDING TO A CIRCUIT PATTERN ON THE SPECIMEN 13 IN A STORAGE UNIT 27 AND STORE A PICTURE ELECTRICAL SIGNAL REPRESENTING THE NUMBER OF SECOND SECONDARY ELECTRONS 20 CORRESPONDING TO AN IDENTICAL CIRCUIT PATTERN ON THE SPECIMEN 13 ADJACENT TO THE CIRCUIT PATTERN IN A STORAGE UNIT 28
79
COMPARE THE PICTURE ELECTRICAL SIGNAL STORED IN THE STORAGE UNIT 27 WITH THE PICTURE SIGNAL STORED IN THE STORAGE UNIT 28 BY USING A PROCESSING UNIT 29 AND DISPLAY THE LATTER ON A MONITOR 32
EXTRACT A DEFECT BY USING A DEFECT JUDGMENT UNIT 30 FROM RESULTS OF COMPARISON PRODUCED BY THE PROCESSING UNIT 29, DISPLAY THE DEFECT ON THE MONITOR 32 AND TRANSMITS AN ELECTRICAL SIGNAL REPRESENTING THE DEFECT TO AN OUTPUT UNIT 38

FIG. 5

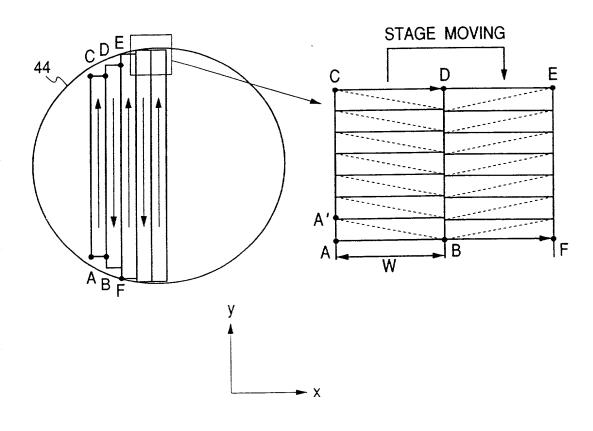
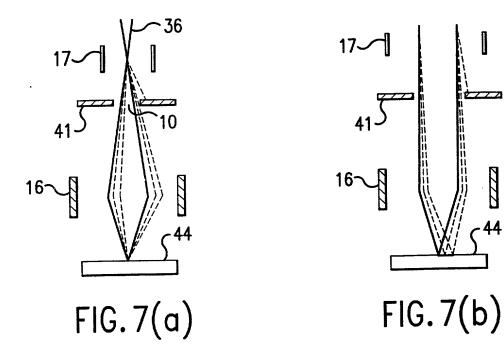


FIG. 6



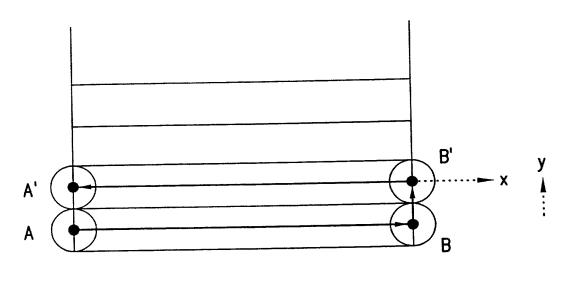
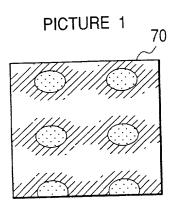


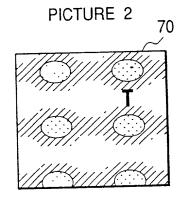
FIG.8

FIG. 9(a)

FIG. 9(b)

FIG. 9(c)





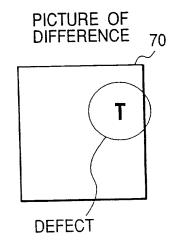


FIG. 10

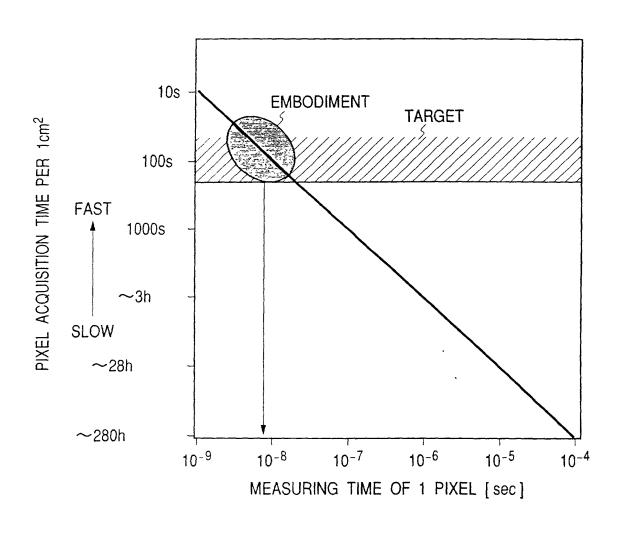


FIG. 11

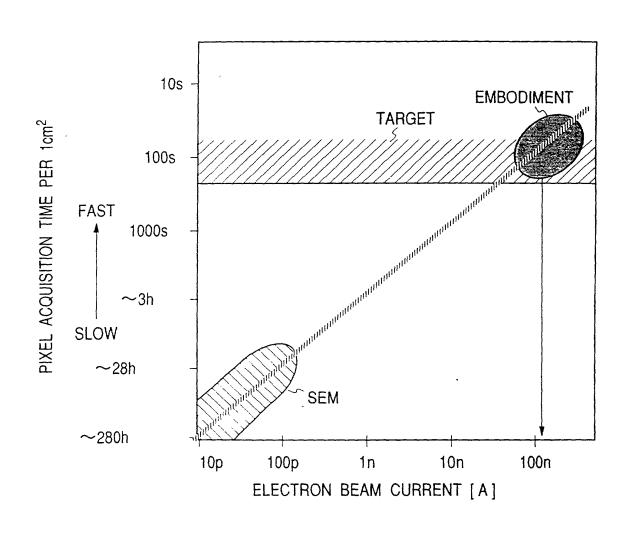


FIG. 12

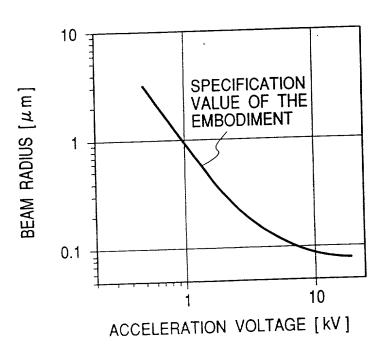


FIG. 13

